

**WHAT IS CLAIMED IS:**

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1. An isolated polynucleotide comprising:
    - a) the nucleotide sequence of FIG. 3; or
    - b) a fragment comprising at least 10 contiguous nucleotides of the nucleotide sequence of FIG 3.
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2. An isolated polynucleotide comprising:
    - a) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence of FIG. 3;
    - b) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence numbers 318-335 as depicted in FIG. 3;
    - c) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence numbers 368-385 as depicted in FIG. 3; or
    - 15 d) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence numbers 671-688 as depicted in of FIG. 3.
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3. An isolated polynucleotide which hybridizes under stringent conditions to the complement of the polynucleotide of Claims 1 or 2.
4. A vector comprising the polynucleotide of Claims 1 or 2.
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5. An expression vector comprising the polynucleotide of Claims 1 or 2 in operative association with a nucleotide regulatory sequence that controls expression of the nucleotide sequence in a host cell.
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6. A host cell genetically engineered to contain the polynucleotide of any of Claims 1 to 5.
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7. An isolated gene product comprising:
    - a) the amino acid sequence encoded by the polynucleotide of Claim 1 or 2;
    - b) the amino acid sequence shown in FIG. 3; or
    - c) the amino acid sequence having at least 80% identity, over a region of identical size without any insertions or deletions, to at least 40 contiguous amino acids of the sequence as depicted in FIG.3.

8. An isolated or recombinant polypeptide comprising at least 10 contiguous amino acids of a protein defined by an amino acid sequence as depicted in Figure 3, which polypeptide is capable of being bound by an antibody to said protein defined by an amino acid sequence as depicted in Figure 3.

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9. An isolated or recombinant polypeptide comprising a PKA-RII subunit binding domain defined by amino acid sequence numbers 318-335 as depicted in Figure 3.

10. An isolated or recombinant polypeptide comprising a PKA-RII subunit binding domain defined by amino acid sequence numbers 368-385 as depicted in Figure 3.

11. An isolated or recombinant polypeptide comprising a PKA-RII subunit binding domain defined by amino acid sequence numbers 671-688 as depicted in Figure 3.

12. An antibody that immunospecifically binds the gene product of any of Claims 7-11.

13. The antibody of claim 12 capable of inhibiting sperm motility.

14. The antibody of claim 12 which is monoclonal.

15. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an effective amount of the antibody of claim 12.

16. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an effective amount of a polypeptide of any of claims 9-11.

17. A contraceptive comprising the composition of claim 15 or 16, effective to inhibit or decrease sperm motility.

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18. A method for inhibiting fertilization in a subject comprising administering the pharmaceutical composition of claim 15 or 16 to the subject, wherein sperm motility is inhibited or decreased.

19. A method of modulating the activity of FSP95 or at least one of its signalling pathway or cell that expresses FSP95, comprising contacting the cell with:

- a) the antibody of claim 12;
- b) the gene product of claim 7; or
- c) the polypeptide of any of claims 8-11.

5           20.     A method of modulating the activity of FSP95 or a cell expressing FSP95, comprising contacting FSP95 or a cell expressing FSP95, with a kinase or phosphatase.

          21.     A method for diagnosing or screening for the presence of or a predisposition for developing a fertility-related disorder associated with the presence of antibodies  
10 immunoreactive to FSP95 in a subject, comprising collecting a sample of serum from the subject and detecting the presence of antibodies to FSP95 in said sample, wherein the presence of antibody indicates the presence or predisposition of a fertility-related disorder.

          22.     A method of identifying a modulator of FSP95, comprising contacting  
15 FSP95 or a cell expressing FSP95 with a candidate modulator and measuring or detecting the activity of FSP95.

          23.     The method of claim 22, wherein said activity is measured by a sperm motility assay.

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          24.     A method of treating a subject for a fertility-related disorder comprising administering an effective amount of the polynucleotide of claim 1 or claim 2, to the subject.

25           25.     A method of treating a subject for a fertility-related disorder comprising administering an effective amount of the gene product of claim 7, or the polypeptide of any of claims 8-11, to the subject.

          26.     A method of treating a subject for a fertility-related disorder comprising  
30 administering an effective amount of the antibody of claim 13 or 14.

          27.     A transgenic non-human animal containing a transgene encoding the gene product of claim 7, or encoding the polypeptide of any of claims 8-11.

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28. A transgenic non-human animal containing a transgene comprising the polynucleotide of claim 1 or 2.

29. A method for producing gene product of FSP95, comprising growing a  
5 recombinant cell containing the polynucleotide of claim 1 or 2, such that the encoded gene product is expressed by the cell and recovering the expressed gene product.

30. A kit comprising in one or more containers a substance selected from the group consisting of, an antibody to FSP95, nucleic acid probes capable of hybridizing to  
10 RNA of FSP95, or pairs of nucleic acid primers capable of priming amplification of at least one portion of the FSP95 gene.

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